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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,544	07/11/2003	Donghang Yan	CSPTAL15.004AUS	5176

20995 7590 04/21/2004

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EXAMINER	
TRAN, TAN N	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/618,544	Applicant(s) YAN ET AL.	
	Examiner TAN N TRAN	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *16-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/08/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of Group I, claims 1-15 is acknowledged.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 4-10,12-15 are objected to because of the following informalities:

In claims 4-10,12-15, line 1, "the said" should be changed to – said --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4,6-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, lines 1,2, "said first insulation layer (3) is made of organic, inorganic or ferroelectric material" is unclear as to whether it is being referred to the first insulation layer (3) is selected from a group consisting of organic, inorganic or ferroelectric material.

In claims 11,14, line 1,2, "the said organic semiconductor layer" lacks of antecedent basis.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ymazaki et al. (2002/0014624) in view of Klauk et al., "A reduced complexity process for organic thin film transistors" (2000) applied physics letters ,vol 76, No. 13, pgs 1692-1694.

With regard to claims 1,2,4,6,8,10 Ymazaki et al. discloses a substrate 300, a wiring line 302a serves as a gate electrode, a gate insulation layer (303,304) formed on the wiring line 302, a source line 326 and a drain line 328 formed on the gate insulation layer (303,304) including a first insulation layer 303 and a second insulation layer 304 wherein the first insulation layer 303 made of inorganic material such as tantalum oxide, and the second insulation layer 304 made of inorganic material such as silicon oxide. (Note lines 4,5, paragraph0079, and lines 1-7, paragraph 0080, page 5, figs. 3A-3E of Ymazaki et al.).

Ymazaki et al. does not disclose an active layer which overlays the source electrode and drain electrode.

However, Klauk et al. discloses an active layer which overlays the source electrode and drain electrode. (Note figs. 1(a),1(b) of Klauk et al.).

Therefore, it would have been obvious to one of ordinary skill in the art to form the Ymazaki et al.'s device having an active layer which overlays the source electrode and drain electrode such as taught by Klauk et al. in order to allow a large drain current to flow at zero gate bias.

With regard to claims 3, It is inherent that the dielectric constant of the first insulation layer 303 is at least three times higher than that of the second insulation layer 304 because the first insulation layer 303 made of tantalum oxide material having high K dielectric constant about 25, and the second insulation layer 304 made of silicon oxide having dielectric constant about 3.9. (Note lines 5,6, paragraph 0060, page 4) is cited to support for the inherent position.

With regard to claims 5,7, Ymazaki et al. and Klauk et al. disclose all claimed invention, except the first insulation layer made of the organic material or ferroelectric material wherein the organic material is polyvinylidene fluoride or ferroelectric material is barium titanate. However, although Ymazaki et al. and Klauk et al do not teach exact the material of the first insulation layer as that claimed by Applicant, the material differences are considered obvious design choices and are not patentable unless unobvious or expected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note in re Leshin, 125 USPQ 416.

With regard to claim 9, Ymazaki et al. and Klauk et al. disclose all claimed invention, except the second insulation layer made of the organic polymer material wherein the organic polymer material is poly(methyl methacrylate), polyimide or epoxide resin. However, although

Ymazaki et al. and Klauk et al do not teach exact the material of the second insulation layer as that claimed by Applicant, the material differences are considered obvious design choices and are not patentable unless unobvious or expected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note in re Leshin, 125 USPQ 416.

With regard to claim 11, Ymazaki et al. and Klauk et al. disclose all the claimed subject matter except for the organic semiconductor active layer is made of N-type or P-type semiconductor material. However, it would have been obvious to one of ordinary skill in the art to form the organic semiconductor active layer is made of N-type or P-type semiconductor material in order to allow a large drain current to flow at zero gate bias.

With regard to claim 12-15, Ymazaki et al. and Klauk et al. disclose all claimed invention, except the organic semiconductor active material is made of a polymer material, N-type semiconductor material, or P-type semiconductor material wherein polymer material is polythiopene, or the N-type semiconductor material is selected from a group consisting of $F_{16}CuPc$, $F_{16}CrPc$, $F_{16}ZnPc$, $F_{16}H_2Pc$, the mixtures thereof, and the eutectics thereof, or the P-type semiconductor material is selected from a group consisting of CuPc, NiPc,ZnPc,H_2Pc, the mixtures thereof, and the eutectics thereof. However, although Ymazaki et al. and Klauk et al do not teach exact the material of the semiconductor active layer as that claimed by Applicant, the material differences are considered obvious design choices and are not patentable unless unobvious or expected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note in re Leshin, 125 USPQ 416.

Conclusion

6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tan Tran whose telephone number is (571) 272-1923. The examiner can normally be reached on M-F 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

TT

April 2004

Minhloan Tran
Primary Examiner
Art Unit 2826